

SEQUENCE LISTING

<110> Rockwell, Patricia
Goldstein, Neil I.

<120> Combination Methods of Inhibiting Tumor Growth With a Vascular
Endothelial Growth Factor Receptor Antagonist

<130> 11245/46211

<140> not assigned
<141> 2002-03-04

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<170> WordPerfect 8.0 for Windows

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gct atc agc tgg gtg cga cag gcc cct gga caa ggg ctt gag tgg atg 144
Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe
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Gln Gly Arg Val Thr Phe Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
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Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
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gcg aga gga tac gat tac tat gat agt agt ggc gtg gct tcc ccc ttt 336
Ala Arg Gly Tyr Asp Tyr Tyr Asp Ser Ser Gly Val Ala Ser Pro Phe
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Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe
50 55 60
Gln Gly Arg Val Thr Phe Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95
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Arg Val Thr Ile Ser Cys Ser Gly Ser Thr Ser Asn Ile Gly Thr Asn
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Thr Ala Asn Trp Phe Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
atc cac aat aat aat cag cgg ccc tca ggg gtc cct gac cga ttc tct 192
Ile His Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60
ggc tcc aag tct ggc acc tca gcc tcc ctg gcc atc agt ggg ctc cag 240
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80
tct gag gat gag gct gat tat tac tgt gca gca tgg gat gac agc ctg 288
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

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35 40 45

Ile His Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
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85 90 95

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100 105 110

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
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agc atg aac tgg gtc cgc cag gct cca ggg aag ggg ctg gag tgg gtc 144
Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

tca tcc att agt agt agt agt tac ata tac tac gca gac tca gtg 192
Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val
50 55 60

aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tca ctg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt 288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85

90

95

gcg aga gtc aca gat gct ttt gat atc tgg ggc caa ggg aca atg gtc 336
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 100 105 110

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 Thr Val Ser Ser
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 35 40 45

Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
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Thr Val Ser Ser
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 Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

tta gcc tgg tac caa cag aaa cct ggc cag gct ccc agg ctc ctc atc 144
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

tat gat tca tcc aac agg gcc act ggc atc cca gcc aga ttc agt ggc 192
 Tyr Asp Ser Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly

50

55

60

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65				70					75					80		
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Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Asn	Thr	Phe	Pro	Pro	
				85				90				95				
acg	ttc	ggc	caa	ggg	acc	aag	gtg	gaa	atc	aaa						321
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Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	
				35				40				45				
Tyr	Asp	Ser	Ser	Asn	Arg	Ala	Thr	Gly	Ile	Pro	Ala	Arg	Phe	Ser	Gly	
				50				55				60				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Glu	Pro	
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Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Asn	Thr	Phe	Pro	Pro	
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Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	
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agc	atg	aac	tgg	gtc	cgc	cag	gct	cca	ggg	aag	ggg	ctg	gag	tgg	gtc	144
Ser	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
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tca	tcc	att	agt	agt	agt	agt	tac	ata	tac	tac	gca	gac	tca	gtg		192

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aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tca ctg tat		240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr		
65	70	75
ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt		288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys		
85	90	95
gcg aga gtc aca gat gct ttt gat atc tgg ggc caa ggg aca atg gtc		336
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acc gtc tca agc		348
Thr Val Ser Ser		
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Ser Ile Thr Ile Ser Cys Ala Gly Thr Thr Asp Leu Thr Tyr Tyr		
20	25	30
gac ctt gtc tcc tgg tac caa cag cac cca ggc caa gca ccc aaa ctc		144
Asp Leu Val Ser Trp Tyr Gln Gln His Pro Gly Gln Ala Pro Lys Leu		
35	40	45
gtg att tat gac ggc aat aag cgg ccc tca gga gtt tct aat cgc ttc		192
Val Ile Tyr Asp Gly Asn Lys Arg Pro Ser Gly Val Ser Asn Arg Phe		
50	55	60
tct ggc tcc aag tct ggc aac acg gcc tcc ctg aca atc tct gga ctc		240
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu		
65	70	75
cag gct gag gac gag gct gat tat tac tgc aac tca tat gta agc agc		288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Val Ser Ser		
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				20				25					30		
Asp	Leu	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Gln	Ala	Pro	Lys	Leu
				35			40				45				
Val	Ile	Tyr	Asp	Gly	Asn	Lys	Arg	Pro	Ser	Gly	Val	Ser	Asn	Arg	Phe
				50		55					60				
Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu
				65		70			75					80	
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Asn	Ser	Tyr	Val	Ser	Ser
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Arg	Phe	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu		
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35          40          45

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tca tcc att agt agt agt agt agt tac ata tac tac gca gac tca gtg	192
Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val	
50 55 60	

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aag ggc cga ttc acc atc tcc aga gac aac gcc aag gac tca ctg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asp Ser Leu Tyr
65 70 75 80

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ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt 288
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

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gcg aga gtc aca gat gct ttt gat atc tgg ggc caa ggg aca atg gtc 336
Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val
          100          105          110

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Thr Val Ser Ser
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20 25 30

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35 40 45

Ser Ser Ile Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asp Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Val Thr Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val
100 105 110

Thr Val Ser Ser
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gac aga gtc acc atc act tgt cgg gcg agt cag ggt att agt agt cgg 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Arg
20 25 30

tta gcc tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc 144
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat gct gca tcc agt ttg caa act ggg gtc cca tca agg ttc agc ggc 192
Tyr Ala Ala Ser Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca gat ttc act ctc act atc agc agc ctg cag cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

gaa gat ttt gca act tac tat tgt caa cag gct aac agg ttc cct ccg 288
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Arg Phe Pro Pro
85 90 95

act ttc ggc cct ggg acc aaa gtg gat atc aaa 321
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Arg
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Arg Phe Pro Pro
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Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

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agg gtc acc atc tcc tgc act ggg agc cac tcc aac ttc ggg gca gga 96
Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly
20 25 30

act gat gta cat tgg tac caa cac ctt cca gga aca gcc ccc aga ctc 144
Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
35 40 45

ctc att cat gga gac agt aat cgg ccc tcc ggg gtc cct gac cga ttc 192
Leu Ile His Gly Asp Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

tct ggc tcc agg tct ggc acc tca gcc tcc ctg gcc atc act ggg ctc 240
Ser Gly Ser Arg Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

cgg gtt gag gat gag gct gat tat tac tgt cag tcg tat gac tat ggc 288
Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly
85 90 95

ctg aga ggt tgg gtg ttc ggc ggc ggg acc aag ctg acc gtc ctt 333
Leu Arg Gly Trp Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

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20 25 30

Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
35 40 45

Leu Ile His Gly Asp Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Arg Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly
85 90 95

Leu Arg Gly Trp Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asn Asn Tyr
20 25 30

tta aat tgg tat caa cag aaa cca gga aaa gcc cct aag ctc ctg atc 144
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat gct gcc tcc act ttg caa agt ggg gtc cca tca agg ttc agt ggc 192
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca gat ttc act ctc acc atc acc agc cta cag cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65 70 75 80

gaa gat tct gca act tat tac tgc caa cag tat tcc cgt tat cct ccc 288
Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Arg Tyr Pro Pro
85 90 95

act ttc ggc gga ggg acc aag gtg gag atc aca 321
Thr Phe Gly Gly Thr Lys Val Glu Ile Thr
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20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65 70 75 80

Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Arg Tyr Pro Pro
85 90 95

Thr Phe Gly Gly Thr Lys Val Glu Ile Thr
100 105

<210> 38
<211> 330
<212> DNA
<213> Human

<400> 38

cag tct gcc ctg act cag cct gcc tcc gtg tct ggg tct cgt gga cag 48
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Arg Gly Gln
5 10 15

tcg atc acc ctc tcc tgc acc ggc tcc agc act gat gtg ggt aat tat 96
Ser Ile Thr Leu Ser Cys Thr Gly Ser Ser Thr Asp Val Gly Asn Tyr
20 25 30

aac tat atc tcc tgg tac caa caa cac cca ggc caa gcc ccc aaa ctc 144
Asn Tyr Ile Ser Trp Tyr Gln Gln His Pro Gly Gln Ala Pro Lys Leu
35 40 45

ttg att tac gat gtc act agt cgg ccc tca ggt gtt tct gat cgc ttc 192
Leu Ile Tyr Asp Val Thr Ser Arg Pro Ser Gly Val Ser Asp Arg Phe
50 55 60

tct ggc tcc aag tca ggc ctc acg gcc tcc ctg acc atc tct gga ctc 240
Ser Gly Ser Lys Ser Gly Leu Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

cag cct gaa gac gag gct gac tat tac tgc aac tcc tat tct gcc acc 288
Gln Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Ser Ala Thr
85 90 95

gac act ctt gtt ttt ggc gga ggg acc aag ctg acc gtc cta 330
Asp Thr Leu Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 39
<211> 110
<212> PRT
<213> Human

<400> 39

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Arg Gly Gln
5 10 15

Ser Ile Thr Leu Ser Cys Thr Gly Ser Ser Thr Asp Val Gly Asn Tyr
20 25 30

Asn Tyr Ile Ser Trp Tyr Gln Gln His Pro Gly Gln Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Asp Val Thr Ser Arg Pro Ser Gly Val Ser Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Leu Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Ser Ala Thr
85 90 95

Asp Thr Leu Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 40
<211> 333
<212> DNA
<213> Human

<400> 40

cag gct gtg ctg act cag ccg tcc tca gtg tct ggg gcc cca gga cag 48
Gln Ala Val Leu Thr Gln Pro Ser Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

agg gtc acc atc tcc tgc act ggg caa agc tcc aat atc ggg gca gat 96
Arg Val Thr Ile Ser Cys Thr Gly Gln Ser Ser Asn Ile Gly Ala Asp
20 25 30

tat gat gta cat tgg tac cag caa ttt cca gga aca gcc ccc aaa ctc 144
Tyr Asp Val His Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu
35 40 45

ctc atc tat ggt cac aac aat cgg ccc tca ggg gtc cct gac cga ttc 192
Leu Ile Tyr Gly His Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

tct ggc tcc aag tct ggc acc tca gtc tcc ctg gtc atc agt ggg ctc 240
Ser Gly Ser Lys Ser Gly Thr Ser Val Ser Leu Val Ile Ser Gly Leu
65 70 75 80

cag gct gag gat gag gct gat tat tat tgc cag tcc tat gac agc agt 288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

cta agt ggt ttg gta ttc ggc gga ggg acc aag gtg acc gtc cta 333
Leu Ser Gly Leu Val Phe Gly Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 41
<211> 111
<212> PRT
<213> Human

<400> 41

Gln Ala Val Leu Thr Gln Pro Ser Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Gln Ser Ser Asn Ile Gly Ala Asp
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly His Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Val Ser Leu Val Ile Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

Leu Ser Gly Leu Val Phe Gly Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 42
<211> 321
<212> DNA
<213> Human

<400> 42

gac atc cag ttg acc cag tct cca tct tct gtg tct gca tct gtt gga 48
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
5 10 15

gac agc gtc acc atc act tgt cgg gcg agt cag gat att agc agc tgg 96
Asp Ser Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Ser Trp
20 25 30

tta gcc tgg tat caa cag aaa cca ggg gag gcc cct aag ctc ctg atc 144
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Glu Ala Pro Lys Leu Leu Ile
35 40 45

tat gct gca tcc ctt ctt caa agt ggg gtc cca tca cgg ttc agc ggc 192
Tyr Ala Ala Ser Leu Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca gat ttc gct ctc act atc aac agc ctg cag cct 240
Ser Gly Ser Gly Thr Asp Phe Ala Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

gaa gat ttt gca act tac ttt tgt caa cag gct gac agt ttc cct ccc 288
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asp Ser Phe Pro Pro
85 90 95

acc ttc ggc caa ggg aca cgg ctg gag att aaa 321
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 43
<211> 107
<212> PRT
<213> Human

<400> 43

Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
5 10 15

Asp Ser Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Ser Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Glu Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Leu Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Ala Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asp Ser Phe Pro Pro
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 44
<211> 321
<212> DNA
<213> Human

<400> 44

gac atc gag ttg acc cag tct cca tct tcc gtg tct gca tct gtg gga 48
Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
5 10 15

gac aga gtc acc ctc act tgt cgg gcg agt cag agt att aag agg tgg 96
Asp Arg Val Thr Leu Thr Cys Arg Ala Ser Gln Ser Ile Lys Arg Trp
20 25 30

tta gcc tgg tat cag cag aaa cca ggg aag gcc cct agg ctc ctc atc 144
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile
35 40 45

tat gct gca tcc act ttg caa agt ggg gtc cca tca agg ttc agc ggc 192
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

ggg gga tct ggg aca gat ttc act ctc acc atc aac agc ctg cag cct 240
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

gaa gat ttt gca att tac tac tgt caa cag gct aac agt ttc cct ccc 288
Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Pro
85 90 95

act ttc ggc cct ggg acc aaa gtg gat atc aaa 321
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 45
<211> 107
<212> PRT
<213> Human

<400> 45

Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
5 10 15

Asp Arg Val Thr Leu Thr Cys Arg Ala Ser Gln Ser Ile Lys Arg Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Pro
85 90 95

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 46
<211> 333
<212> DNA
<213> Human

<400> 46

cag tct gtc gtg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag 48
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

agg gtc acc atc tcc tgc agt ggg agc agg tcc aac atc ggg gca cac 96
Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Ala His
20 25 30

tat gaa gtc cag tgg tac cag cag ttt ccg gga gca gcc ccc aaa ctc 144
Tyr Glu Val Gln Trp Tyr Gln Gln Phe Pro Gly Ala Ala Pro Lys Leu
35 40 45

ctc atc tat ggt gac acc aat cgg ccc tca ggg gtc cct gac cga ttc 192
Leu Ile Tyr Gly Asp Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

tct gcc tcc cac tct ggc acc tca gcc tcc ctt gcc atc aca ggg ctc 240
Ser Ala Ser His Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

cag gct gag gat gag gct gat tat tac tgc cag tcg tat gac acc agt 288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr Ser
85 90 95

cta cgt ggt ccg gtg ttc ggc gga ggg acc aag ctg acc gtc cta 333
Leu Arg Gly Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 47
<211> 111
<212> PRT
<213> Human

<400> 47

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Ala His
20 25 30

Tyr Glu Val Gln Trp Tyr Gln Gln Phe Pro Gly Ala Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Asp Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Ala Ser His Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr Ser
85 90 95

Leu Arg Gly Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 48
<211> 333
<212> DNA
<213> Human

<400> 48

cag tct gtc gtg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag 48
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

agg gtc acc atc tcc tgc act ggg agc agc tcc aac atc ggg aca ggt 96
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Asn Ile Gly Thr Gly
20 25 30

tat gat gta cat tgg tac cag cag gtt cca gga tca gcc ccc aaa ctc 144
Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Ser Ala Pro Lys Leu
35 40 45

ctc atc tat gct tac acc aat cgg ccc tca ggg gtc cct gac cga ttc 192
Leu Ile Tyr Ala Tyr Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

tct ggc tcc aag tct ggc atg tca gcc tcc ctg gtc atc ggt ggt ctc 240
Ser Gly Ser Lys Ser Gly Met Ser Ala Ser Leu Val Ile Gly Gly Leu
65 70 75 80

cag gct gag gat gag gct gat tat tac tgc cag tcc ttt gac gac agc 288
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Phe Asp Asp Ser
85 90 95

ctg aat ggt ctt gtc ttc gga cct ggg acc tcg gtc acc gtc ctc 333
Leu Asn Gly Leu Val Phe Gly Pro Gly Thr Ser Val Thr Val Leu
100 105 110

<210> 49
<211> 111
<212> PRT
<213> Human

<400> 49

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Thr Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Ser Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Ala Tyr Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Met Ser Ala Ser Leu Val Ile Gly Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Phe Asp Asp Ser
85 90 95

Leu Asn Gly Leu Val Phe Gly Pro Gly Thr Ser Val Thr Val Leu
100 105 110

<210> 50
<211> 333
<212> DNA
<213> Human

<400> 50

cag tct gtg ttg acg cag ccg ccc tca gtg tct ggg gcc cca ggg cag 48
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

agg gtc acc atc tcc tgc act ggg agc cac tcc aac ttc ggg gca ggt 96
Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly
20 25 30

act gat gtc cat tgg tac caa cac ctt cca gga aca gcc ccc aga ctc 144
Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
35 40 45

ctc att cat gga gac act cat cgg ccc tcc ggg gtc gct gac cga ttc 192
Leu Ile His Gly Asp Thr His Arg Pro Ser Gly Val Ala Asp Arg Phe
50 55 60

tct ggc tcc agg tct ggc gcc tca gcc tcc ctg gcc atc act ggg ctc 240
Ser Gly Ser Arg Ser Gly Ala Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

cgg gtt gag gat gag gct gat tat tac tgt cag tcg tat gac tat ggc 288
Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly
85 90 95

ctg aga ggt tgg gtg ttc ggc ggc ggg acc aag ctg acc gtc ctt 333
Leu Arg Gly Trp Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 51
<211> 111
<212> PRT
<213> Human

<400> 51

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser His Ser Asn Phe Gly Ala Gly
20 25 30

Thr Asp Val His Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Arg Leu
35 40 45

Leu Ile His Gly Asp Thr His Arg Pro Ser Gly Val Ala Asp Arg Phe
50 55 60

Ser Gly Ser Arg Ser Gly Ala Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Arg Val Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Gly
85 90 95

Leu Arg Gly Trp Val Phe Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 52
<211> 321
<212> DNA
<213> Human

<400> 52

gac atc cag atg acc cag tct cca tct tcc gtg tct gca tct ata gga 48
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Ile Gly
5 10 15

gac aga gtc acc atc act tgt cgg gcg agt cag ggt att gac aac tgg 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Asp Asn Trp
20 25 30

tta ggc tgg tat cag cag aaa cct ggg aaa gcc cct aaa ctc ctg atc 144
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tac gat gca tcc aat ttg gac aca ggg gtc cca tca agg ttc agt gga 192
Tyr Asp Ala Ser Asn Leu Asp Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca tat ttt act ctc acc atc agt agc ctg caa gct 240
Ser Gly Ser Gly Thr Tyr Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala
65 70 75 80

gaa gat ttt gca gtt tat ttc tgt caa cag gct aaa gct ttt cct ccc 288
Glu Asp Phe Ala Val Tyr Phe Cys Gln Gln Ala Lys Ala Phe Pro Pro
85 90 95

act ttc ggc gga ggg acc aag gtg gac atc aaa 321
Thr Phe Gly Gly Thr Lys Val Asp Ile Lys
100 105

<210> 53
<211> 107
<212> PRT
<213> Human

<400> 53

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Ile Gly
5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Asp Asn Trp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Asp Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Tyr Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala
65 70 75 80

Glu Asp Phe Ala Val Tyr Phe Cys Gln Gln Ala Lys Ala Phe Pro Pro
85 90 95

Thr Phe Gly Gly Thr Lys Val Asp Ile Lys
100 105

<210> 54
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<212> PRT
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<400> 54

Thr Gly Ser His Ser Asn Phe Gly Ala Gly Thr Asp Val
5 10

<210> 55
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<400> 55

Gly Asp Ser Asn Arg Pro Ser
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<210> 56
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<212> PRT
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<400> 56

Gln Ser Tyr Asp Tyr Gly Leu Arg Gly Trp Val
5 10

<210> 57

<211> 11
<212> PRT
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<400> 57

Arg Ala Ser Gln Asn Ile Asn Asn Tyr Leu Asn
5 10

<210> 58
<211> 7
<212> PRT
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<400> 58

Ala Ala Ser Thr Leu Gln Ser
5

<210> 59
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<212> PRT
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<400> 59

Gln Gln Tyr Ser Arg Tyr Pro Pro Thr
5

<210> 60
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<400> 60

Thr Gly Ser Ser Thr Asp Val Gly Asn Tyr Asn Tyr Ile Ser
5 10

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Asp Val Thr Ser Arg Pro Ser
5

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Asn Ser Tyr Ser Ala Thr Asp Thr Leu Val
5 10

<210> 63
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Thr Gly Gln Ser Ser Asn Ile Gly Ala Asp Tyr Asp Val His
5 10

<210> 64
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<400> 64

Gly His Asn Asn Arg Pro Ser
5

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Gln Ser Tyr Asp Ser Ser Leu Ser Gly Leu Val
5 10

<210> 66
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<400> 66

Arg Ala Ser Gln Asp Ile Ser Trp Leu Ala
5 10

<210> 67
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Ala Ala Ser Leu Leu Gln Ser
5

<210> 68
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<400> 68

Gln Gln Ala Asp Ser Phe Pro Pro Thr
5

<210> 69
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<400> 69

Arg Ala Ser Gln Ser Ile Lys Arg Trp Leu Ala
5 10

<210> 70
<211> 7
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<400> 70

Ala Ala Ser Thr Leu Gln Ser
5

<210> 71
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<400> 71

Gln Gln Ala Asn Ser Phe Pro Pro Thr
5

<210> 72
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Ser Gly Ser Arg Ser Asn Ile Gly Ala His Tyr Glu Val Gln
5 10

<210> 73
<211> 7
<212> PRT
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<400> 73

Gly Asp Thr Asn Arg Pro Ser
5

<210> 74
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<212> PRT
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<400> 74

Gln Ser Tyr Asp Thr Ser Leu Arg Gly Pro Val

<210> 75
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<212> PRT
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<400> 75

Thr Gly Ser Ser Ser Asn Ile Gly Thr Gly Tyr Asp Val His
5 10

<210> 76
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<212> PRT
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<400> 76

Ala Tyr Thr Asn Arg Pro Ser
5

<210> 77
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<400> 77

Gln Ser Phe Asp Asp Ser Leu Asn Gly Leu Val
5 10

<210> 78
<211> 14
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Thr Gly Ser His Ser Asn Phe Gly Ala Gly Thr Asp Val His
5 10

<210> 79
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<400> 79

Gly Asp Thr His Arg Pro Ser
5

<210> 80
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<212> PRT
<213> Human

<400> 80

Gln Ser Tyr Asp Tyr Gly Leu Arg Gly Trp Val
5 10

<210> 81
<211> 11
<212> PRT
<213> Human

<400> 81

Arg Ala Ser Gln Gly Ile Asp Asn Trp Leu Gly
5 10

<210> 82
<211> 7
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<213> Human

<400> 82

Asp Ala Ser Asn Leu Asp Thr
5

<210> 83
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<212> PRT
<213> Human

<400> 83

Gln Gln Ala Lys Ala Phe Pro Pro Thr
5

<210> 84
<211> 2351
<212> DNA
<213> Human

<400> 84

ggtaccgag aaagaaccgg ctcccgagtt ctgggcattt cgcccggtc gaggtgcagg 59

atg cag agc aag gtg ctg ctg gcc gtc gcc ctg tgg ctc tgc gtg gag 107
Met Gln Ser Lys Val Leu Leu Ala Val Ala Leu Trp Leu Cys Val Glu
5 10 15

acc cgg gcc gcc tct gtg ggt ttg cct agt gtt tct ctt gat ctg ccc 155
Thr Arg Ala Ala Ser Val Gly Leu Pro Ser Val Ser Leu Asp Leu Pro
20 25 30

agg ctc agc ata caa aaa gac ata ctt aca att aag gct aat aca act 203
Arg Leu Ser Ile Gln Lys Asp Ile Leu Thr Ile Lys Ala Asn Thr Thr
35 40 45

ctt caa att act tgc agg gga cag agg gac ttg gac tgg ctt tgg ccc 251
Leu Gln Ile Thr Cys Arg Gly Gln Arg Asp Leu Asp Trp Leu Trp Pro
50 55 60

aat aat cag agt ggc agt gag caa agg gtg gag gtg act gag tgc agc 299
Asn Asn Gln Ser Gly Ser Glu Gln Arg Val Glu Val Thr Glu Cys Ser

65

70

75

80

gat ggc ctc ttc tgt aag aca ctc aca att cca aaa gtg atc gga aat	347
Asp Gly Leu Phe Cys Lys Thr Leu Thr Ile Pro Lys Val Ile Gly Asn	
85 90 95	
gac act gga gcc tac aag tgc ttc tac cgg gaa act gac ttg gcc tcg	395
Asp Thr Gly Ala Tyr Lys Cys Phe Tyr Arg Glu Thr Asp Leu Ala Ser	
100 105 110	
gtc att tat gtc tat gtt caa gat tac aga tct cca ttt att gct tct	443
Val Ile Tyr Val Tyr Val Gln Asp Tyr Arg Ser Pro Phe Ile Ala Ser	
115 120 125	
gtt agt gac caa cat gga gtc gtg tac att act gag aac aaa aac aaa	491
Val Ser Asp Gln His Gly Val Val Tyr Ile Thr Glu Asn Lys Asn Lys	
130 135 140	
act gtg gtg att cca tgt ctc ggg tcc att tca aat ctc aac gtg tca	539
Thr Val Val Ile Pro Cys Leu Gly Ser Ile Ser Asn Leu Asn Val Ser	
145 150 155 160	
ctt tgt gca aga tac cca gaa aag aga ttt gtt cct gat ggt aac aga	587
Leu Cys Ala Arg Tyr Pro Glu Lys Arg Phe Val Pro Asp Gly Asn Arg	
165 170 175	
att tcc tgg gac agc aag aag ggc ttt act att ccc agc tac atg atc	635
Ile Ser Trp Asp Ser Lys Lys Gly Phe Thr Ile Pro Ser Tyr Met Ile	
180 185 190	
agc tat gct ggc atg gtc ttc tgt gaa gca aaa att aat gat gaa agt	683
Ser Tyr Ala Gly Met Val Phe Cys Glu Ala Lys Ile Asn Asp Glu Ser	
195 200 205	
tac cag tct att atg tac ata gtt gtc gtt gta ggg tat agg att tat	731
Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val Gly Tyr Arg Ile Tyr	
210 215 220	
gat gtg gtt ctg agt ccg tct cat gga att gaa cta tct gtt gga gaa	779
Asp Val Val Leu Ser Pro Ser His Gly Ile Glu Leu Ser Val Gly Glu	
225 230 235 240	
aag ctt gtc tta aat tgt aca gca aga act gaa cta aat gtg ggg att	827
Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Ile	
245 250 255	
gac ttc aac tgg gaa tac cct tct tcg aag cat cag cat aag aaa ctt	875
Asp Phe Asn Trp Glu Tyr Pro Ser Ser Lys His Gln His Lys Lys Leu	
260 265 270	
gta aac cga gac cta aaa acc cag tct ggg agt gag atg aag aaa ttt	923
Val Asn Arg Asp Leu Lys Thr Gln Ser Gly Ser Glu Met Lys Lys Phe	
275 280 285	
ttg agc acc tta act ata gat ggt gta acc cgg agt gac caa gga ttg	971
Leu Ser Thr Leu Thr Ile Asp Gly Val Thr Arg Ser Asp Gln Gly Leu	
290 295 300	
tac acc tgt gca gca tcc agt ggg ctg atg acc aag aag aac agc aca	1019
Tyr Thr Cys Ala Ala Ser Ser Gly Leu Met Thr Lys Lys Asn Ser Thr	
305 310 315 320	
ttt gtc agg gtc cat gaa aaa cct ttt gtt gct ttt gga agt ggc atg	1067
Phe Val Arg Val His Glu Lys Pro Phe Val Ala Phe Gly Ser Gly Met	

325

330

335

gaa tct ctg gtg gaa gcc acg gtg ggg gag cgt gtc aga atc cct gcg			1115
Glu Ser Leu Val Glu Ala Thr Val Gly Glu Arg Val Arg Ile Pro Ala			
340	345	350	
aag tac ctt ggt tac cca ccc cca gaa ata aaa tgg tat aaa aat gga			1163
Lys Tyr Leu Gly Tyr Pro Pro Glu Ile Lys Trp Tyr Lys Asn Gly			
355	360	365	
ata ccc ctt gag tcc aat cac aca att aaa gcg ggg cat gta ctg acg			1211
Ile Pro Leu Glu Ser Asn His Thr Ile Lys Ala Gly His Val Leu Thr			
370	375	380	
att atg gaa gtg agt gaa aga gac aca gga aat tac act gtc atc ctt			1259
Ile Met Glu Val Ser Glu Arg Asp Thr Gly Asn Tyr Thr Val Ile Leu			
385	390	395	400
acc aat ccc att tca aag gag aag cag agc cat gtg gtc tct ctg gtt			1307
Thr Asn Pro Ile Ser Lys Glu Lys Gln Ser His Val Val Ser Leu Val			
405	410	415	
gtg tat gtc cca ccc cag att ggt gag aaa tct cta atc tct cct gtg			1355
Val Tyr Val Pro Pro Gln Ile Gly Glu Lys Ser Leu Ile Ser Pro Val			
420	425	430	
gat tcc tac cag tac ggc acc act caa acg ctg aca tgt acg gtc tat			1403
Asp Ser Tyr Gln Tyr Gly Thr Thr Gln Thr Leu Thr Cys Thr Val Tyr			
435	440	445	
gcc att cct ccc ccg cat cac atc cac tgg tat tgg cag ttg gag gaa			1451
Ala Ile Pro Pro His His Ile His Trp Tyr Trp Gln Leu Glu Glu			
450	455	460	
gag tgc gcc aac gag ccc agc cat gct gtc tca gtg aca aac cca tac			1499
Glu Cys Ala Asn Glu Pro Ser His Ala Val Ser Val Thr Asn Pro Tyr			
465	470	475	480
cct tgt gaa gaa tgg aga agt gtg gag gac ttc cag gga gga aat aaa			1547
Pro Cys Glu Glu Trp Arg Ser Val Glu Asp Phe Gln Gly Gly Asn Lys			
485	490	495	
att gaa gtt aat aaa aat caa ttt gct cta att gaa gga aaa aac aaa			1595
Ile Glu Val Asn Lys Asn Gln Phe Ala Leu Ile Glu Gly Lys Asn Lys			
500	505	510	
act gta agt acc ctt gtt atc caa gcg gca aat gtg tca gct ttg tac			1643
Thr Val Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr			
515	520	525	
aaa tgt gaa gcg gtc aac aaa gtc ggg aga gga gag agg gtg atc tcc			1691
Lys Cys Glu Ala Val Asn Lys Val Gly Arg Gly Glu Arg Val Ile Ser			
530	535	540	
ttc cac gtg acc agg ggt cct gaa att act ttg caa cct gac atg cag			1739
Phe His Val Thr Arg Gly Pro Glu Ile Thr Leu Gln Pro Asp Met Gln			
545	550	555	560
ccc act gag cag gag agc gtg tct ttg tgg tgc act gca gac aga tct			1787
Pro Thr Glu Gln Glu Ser Val Ser Leu Trp Cys Thr Ala Asp Arg Ser			
565	570	575	
acg ttt gag aac ctc aca tgg tac aag ctt ggc cca cag cct ctg cca			1835
Thr Phe Glu Asn Leu Thr Trp Tyr Lys Leu Gly Pro Gln Pro Leu Pro			

580

585

590

atc cat gtg gga gag ttg ccc aca cct gtt tgc aag aac ttg gat act			1883
Ile His Val Gly Glu Leu Pro Thr Pro Val Cys Lys Asn Leu Asp Thr			
595	600	605	
ctt tgg aaa ttg aat gcc acc atg ttc tct aat agc aca aat gac att			1931
Leu Trp Lys Leu Asn Ala Thr Met Phe Ser Asn Ser Thr Asn Asp Ile			
610	615	620	
ttg atc atg gag ctt aag aat gca tcc ttg cag gac caa gga gac tat			1979
Leu Ile Met Glu Leu Lys Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr			
625	630	635	640
gtc tgc ctt gct caa gac agg aag acc aag aaa aga cat tgc gtg gtc			2027
Val Cys Leu Ala Gln Asp Arg Lys Thr Lys Lys Arg His Cys Val Val			
645	650	655	
agg cag ctc aca gtc cta gag cgt gtg gca ccc acg atc aca gga aac			2075
Arg Gln Leu Thr Val Leu Glu Arg Val Ala Pro Thr Ile Thr Gly Asn			
660	665	670	
ctg gaa aat cag acg aca agt att ggg gaa agc atc gaa gtc tca tgc			2123
Leu Glu Asn Gln Thr Thr Ser Ile Gly Glu Ser Ile Glu Val Ser Cys			
675	680	685	
acg gca tct ggg aat ccc cct cca cag atc atg tgg tat aaa gat aat			2171
Thr Ala Ser Gly Asn Pro Pro Gln Ile Met Trp Phe Lys Asp Asn			
690	695	700	
gag acc ctt gta gaa gac tca ggc att gta ttg aag gat ggg aac cgg			2219
Glu Thr Leu Val Glu Asp Ser Gly Ile Val Leu Lys Asp Gly Asn Arg			
705	710	715	720
aac ctc act atc cgc aga gtg agg aag gag gac gaa ggc ctc tac acc			2267
Asn Leu Thr Ile Arg Arg Val Arg Lys Glu Asp Glu Gly Leu Tyr Thr			
725	730	735	
tgc cag gca tgc agt gtt ctt ggc tgt gca aaa gtg gag gca ttt ttc			2315
Cys Gln Ala Cys Ser Val Leu Gly Cys Ala Lys Val Glu Ala Phe Phe			
740	745	750	
ata ata gaa ggt gcc cag gaa aag acg aac ttg gaa			2351
Ile Ile Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu			
755	760		

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 <211> 764
 <212> PRT
 <213> Human

<400> 85

Met Gln Ser Lys Val Leu Leu Ala Val Ala Leu Trp Leu Cys Val Glu		
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Thr Arg Ala Ala Ser Val Gly Leu Pro Ser Val Ser Leu Asp Leu Pro		
20	25	30
Arg Leu Ser Ile Gln Lys Asp Ile Leu Thr Ile Lys Ala Asn Thr Thr		
35	40	45
Leu Gln Ile Thr Cys Arg Gly Gln Arg Asp Leu Asp Trp Leu Trp Pro		

50

55

60

Asn Asn Gln Ser Gly Ser Glu Gln Arg Val Glu Val Thr Glu Cys Ser
65 70 75 80

Asp Gly Leu Phe Cys Lys Thr Leu Thr Ile Pro Lys Val Ile Gly Asn
85 90 95

Asp Thr Gly Ala Tyr Lys Cys Phe Tyr Arg Glu Thr Asp Leu Ala Ser
100 105 110

Val Ile Tyr Val Tyr Val Gln Asp Tyr Arg Ser Pro Phe Ile Ala Ser
115 120 125

Val Ser Asp Gln His Gly Val Val Tyr Ile Thr Glu Asn Lys Asn Lys
130 135 140

Thr Val Val Ile Pro Cys Leu Gly Ser Ile Ser Asn Leu Asn Val Ser
145 150 155 160

Leu Cys Ala Arg Tyr Pro Glu Lys Arg Phe Val Pro Asp Gly Asn Arg
165 170 175

Ile Ser Trp Asp Ser Lys Lys Gly Phe Thr Ile Pro Ser Tyr Met Ile
180 185 190

Ser Tyr Ala Gly Met Val Phe Cys Glu Ala Lys Ile Asn Asp Glu Ser
195 200 205

Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val Gly Tyr Arg Ile Tyr
210 215 220

Asp Val Val Leu Ser Pro Ser His Gly Ile Glu Leu Ser Val Gly Glu
225 230 235 240

Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Ile
245 250 255

Asp Phe Asn Trp Glu Tyr Pro Ser Ser Lys His Gln His Lys Lys Leu
260 265 270

Val Asn Arg Asp Leu Lys Thr Gln Ser Gly Ser Glu Met Lys Lys Phe
275 280 285

Leu Ser Thr Leu Thr Ile Asp Gly Val Thr Arg Ser Asp Gln Gly Leu
290 295 300

Tyr Thr Cys Ala Ala Ser Ser Gly Leu Met Thr Lys Lys Asn Ser Thr
305 310 315 320

Phe Val Arg Val His Glu Lys Pro Phe Val Ala Phe Gly Ser Gly Met
325 330 335

Glu Ser Leu Val Glu Ala Thr Val Gly Glu Arg Val Arg Ile Pro Ala
340 345 350

Lys Tyr Leu Gly Tyr Pro Pro Pro Glu Ile Lys Trp Tyr Lys Asn Gly
355 360 365

Ile Pro Leu Glu Ser Asn His Thr Ile Lys Ala Gly His Val Leu Thr
370 375 380

Ile Met Glu Val Ser Glu Arg Asp Thr Gly Asn Tyr Thr Val Ile Leu
385 390 395 400

Thr Asn Pro Ile Ser Lys Glu Lys Gln Ser His Val Val Ser Leu Val
405 410 415

Val Tyr Val Pro Pro Gln Ile Gly Glu Lys Ser Leu Ile Ser Pro Val
420 425 430

Asp Ser Tyr Gln Tyr Gly Thr Thr Gln Thr Leu Thr Cys Thr Val Tyr
435 440 445

Ala Ile Pro Pro Pro His His Ile His Trp Tyr Trp Gln Leu Glu Glu
450 455 460

Glu Cys Ala Asn Glu Pro Ser His Ala Val Ser Val Thr Asn Pro Tyr
465 470 475 480

Pro Cys Glu Glu Trp Arg Ser Val Glu Asp Phe Gln Gly Gly Asn Lys
485 490 495

Ile Glu Val Asn Lys Asn Gln Phe Ala Leu Ile Glu Gly Lys Asn Lys
500 505 510

Thr Val Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr
515 520 525

Lys Cys Glu Ala Val Asn Lys Val Gly Arg Gly Glu Arg Val Ile Ser
530 535 540

Phe His Val Thr Arg Gly Pro Glu Ile Thr Leu Gln Pro Asp Met Gln
545 550 555 560

Pro Thr Glu Gln Glu Ser Val Ser Leu Trp Cys Thr Ala Asp Arg Ser
565 570 575

Thr Phe Glu Asn Leu Thr Trp Tyr Lys Leu Gly Pro Gln Pro Leu Pro
580 585 590

Ile His Val Gly Glu Leu Pro Thr Pro Val Cys Lys Asn Leu Asp Thr
595 600 605

Leu Trp Lys Leu Asn Ala Thr Met Phe Ser Asn Ser Thr Asn Asp Ile
610 615 620

Leu Ile Met Glu Leu Lys Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr
625 630 635 640

Val Cys Leu Ala Gln Asp Arg Lys Thr Lys Lys Arg His Cys Val Val
645 650 655

Arg Gln Leu Thr Val Leu Glu Arg Val Ala Pro Thr Ile Thr Gly Asn
660 665 670

Leu Glu Asn Gln Thr Thr Ser Ile Gly Glu Ser Ile Glu Val Ser Cys
675 680 685

Thr Ala Ser Gly Asn Pro Pro Pro Gln Ile Met Trp Phe Lys Asp Asn
690 695 700

Glu Thr Leu Val Glu Asp Ser Gly Ile Val Leu Lys Asp Gly Asn Arg
705 710 715 720

Asn Leu Thr Ile Arg Arg Val Arg Lys Glu Asp Glu Gly Leu Tyr Thr
725 730 735

Cys Gln Ala Cys Ser Val Leu Gly Cys Ala Lys Val Glu Ala Phe Phe

740

745

750

Ile Ile Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu
755 760

6